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(54) **Gimbal vibration isolation system.**

(57) A gimbal vibration isolation system (20) suitable for use with an inertial platform to enable accurate positioning of the platform independently of a presence of vibratory translational movement upon a gimbal housing enclosing the platform employs a frame assembly centrally located within the platform for pivoting the platform and for isolating the platform from vibration. The platform is formed of two plate assemblies (22) disposed on opposite sides of the frame assembly, with each of the plate assemblies carrying portions of a laser gyro (30) and ancillary optical (28) and electronic equipment (32). The gimbal housing includes a drive ring rotatable about a central axis and encircling the frame assembly which is connected to the drive ring. A central portion of the frame assembly carries a pivot (116) which pivotally supports the platform. An electromagnetic actuator (128) is located at each of a plurality of positions located circumferentially around the central axis wherein each actuator (128) has a first part connecting with the frame and a second part connecting with both plate assemblies of the platform to accomplish a pivoting between platform and frame assembly upon activation of each actuator (128). The frame assembly further includes a plurality of vibration isolation elements (130) of resilient material disposed symmetrically about the central axis and being connected between the first parts of respective ones of the actuators and the drive ring to allow operation of the actuators (128) in an environment substantially free of translatory vibrational movement.

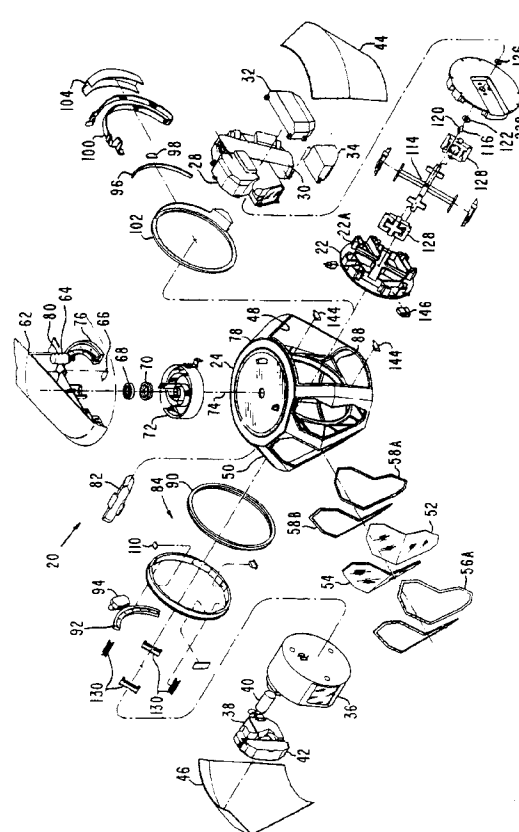


Fig. 1



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EUROPEAN SEARCH REPORT

Application Number

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | EP 93301501.8 |
|--|---|--|---|
| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int. CL.5) |
| A | US - A - 4 645 994 (V.GIANCOLA, E.M.BORSETH) * Claims 1,4,5 * | 1,2,3 | G 05 D 1/10 |
| A | US - A - 4 324 378 (F.D.GROUTAGE) * Claims 1-4 * | 1,2,3 | |
| A | US - A - 4 136 962 (F.BROUWER et al.) * Claims 1,2 * | 1,2,3 | |
| | | | TECHNICAL FIELDS SEARCHED (Int. CL.5) |
| | | | G 05 D 1/00 B 64 C 17/00 F 16 M 11/00 F 16 M 13/00 G 01 C 19/00 G 02 B 27/00 |
| The present search report has been drawn up for all claims | | | |
| Place of search VIENNA | | Date of completion of the search 24-10-1994 | Examiner JASICEK |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p> | | | |

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